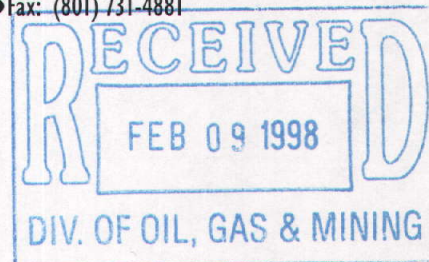




Great Salt Lake Minerals Corporation

765 North 10500 West; P O BOX 1190; Ogden, UT 84404/84402-Phone: 731-3100 • Fax: (801) 731-4881



February 2, 1998

D. Wayne Hedberg, Permit Supervisor, Minerals Reclamation Program
Utah DNR Division of Oil, Gas, and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

RE: Response To 10/28/97 Letter -- Permitting New Features

Dear Wayne,

Submitted herewith is Notice of Intention to Revise Mining Operations at Great Salt Lake Minerals Corporation (GSL). If GSL's operations ceased, the surface evaporation operation is well suited for wildlife management similar to Harold S. Crane Waterfowl Management Area and Bear River Migratory Bird Refuge. Because the new features are Lake bed disturbances and reclamation will not make the area useful for other purposes, GSL believes the Barrier Dike and Dredged Intake Canal are an amendment to the Mine Reclamation Plan and the surety bond is unchanged.

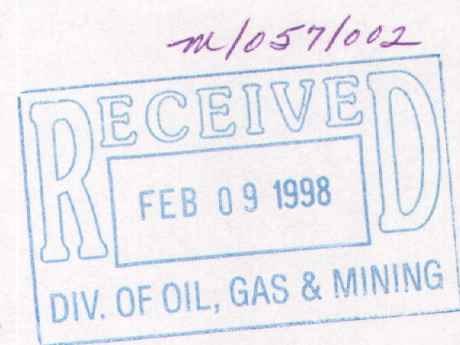
Also submitted are drawings with section lines to allow location description of features requested in your letter dated 7/29/97.

Please contact Mark Kaschmitter, GSL Environmental Engineer (801) 732-3251, with any questions.

I hereby certify that the foregoing is true and correct,

M.J. REYNOLDS
VICE PRESIDENT-OPERATIONS

(h:\mk\mr.rev\MJR\rm)



NOTICE OF INTENT TO REVISE MINING OPERATIONS

I. General Information

1. **Name of Operator/Applicant:**
Max J. Reynolds, Vice President--Operations
2. **Name of Corporation:**
Great Salt Lake Minerals Corporation
3. **Address:**
765 North 10500 West, Ogden, Utah 84404
4. **Phone:**
(801) 731-3100
5. **Name of Project:**
Surface Evaporation Pond (1) Barrier Dike
Surface Evaporation Pond (2) Dredged Intake Canal
6. **Previously Assigned File Number:**
M\057\002
7. **Location of Proposed Expansion Activities:**
Box Elder County, North Arm Great Salt Lake, North and West
Shores of Clymer Bay.
Refer to GSL DWG No. 101-11-05-037 Solar Pond System
8. **Ownership of Land Surface:**
State of Utah
9. **Ownership of Minerals:**
State of Utah
10. **Utah Mining Claim:**
Mining by solar evaporation is authorized by Royalty Agreement
No. 19024 dated September 1, 1962.
11. **Utah State Leases:**
New operations features are covered by Mineral Lease No. 44607.

II. The attached drawings are submitted herewith to meet the requirements of Rule R613-4-105.

III. Operation Plan

GSL uses its west pond solar system to pre-concentrate north arm Great Salt Lake brine. The (1) Barrier Dike diverts storm water and surface runoff away from the surface evaporation pond and back to the Lake. The (2) Dredged Intake Canal takes advantage of the most concentrated north arm brines to fill up the surface evaporation pond. During times of relatively low Lake level the intake canal is absolutely necessary for the operation. The pre-concentrated brine in the west lake pond is then gravity fed via an underwater trench to pump station #1 at Promontory Point and pumped to ponds in Bear River Bay. Sulfate Of Potash, Sodium Chloride, and Magnesium Chloride are then harvested from the ponds as raw material for processing plants.

1) Barrier Dike

The barrier dike follows the 4,201' elevation contour line and is approximately 17 miles long. The historic high Lake elevation is 4,211' so the dike is within the meander line of the Lake and therefore considered a Lake bed disturbance. The dike surface is 10 feet wide at the crest and constructed on unvegetated mud flats and sandy soil. The purpose of the barrier dike is to prevent surface runoff from entering the surface evaporation pond.

2) Dredged Intake Canal

The dredged intake canal is in the North Arm of the Great Salt Lake at the north end of Clymer Bay. Dependent upon Lake level, the canal is either underwater or exposed. The canal provides a hydrological connection between the Lake and GSL's pump station. The canal is approximately ten (10) feet deep, ten (10) to thirty (30) feet wide, and 18,750 feet long. Excavated material is deposited next to the new canal and placed continuously for 1,000 feet alternately on each side of the canal.

IV. Impact Assessment

An environmental assessment was completed by the Department of the Army--Corp of Engineers, Permit No. 199550289, July 19, 1995, to discharge fill material in connection with the construction of the Dredged Intake Canal.

The Clymer Bay/Strong's Knob area is used solely for solar evaporation. Public access is restricted and hunting is prohibited.

V. Reclamation Plan

The new features are Lake bed disturbances. Reclamation will occur naturally with precipitation leveling the dike and Lake wave action filling the dredged canal.

VI. Variance

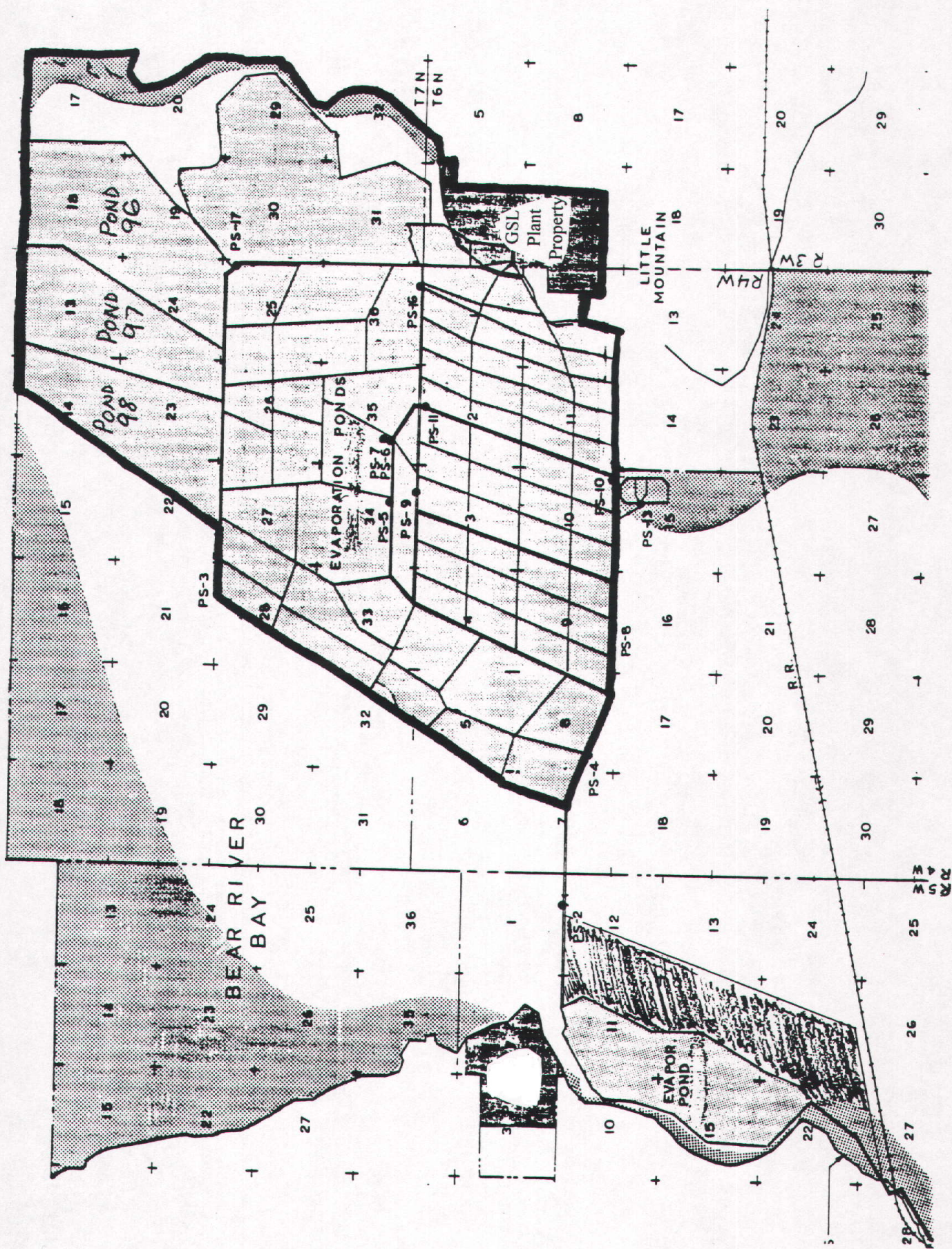
R647-4-107-1.1.11 Operation Practice

Surface evaporation operations do not have mine shafts and/or tunnels.

GSL is under OSHA regulatory jurisdiction so the MSHA regulatory reference is not applicable.

VII. Surety

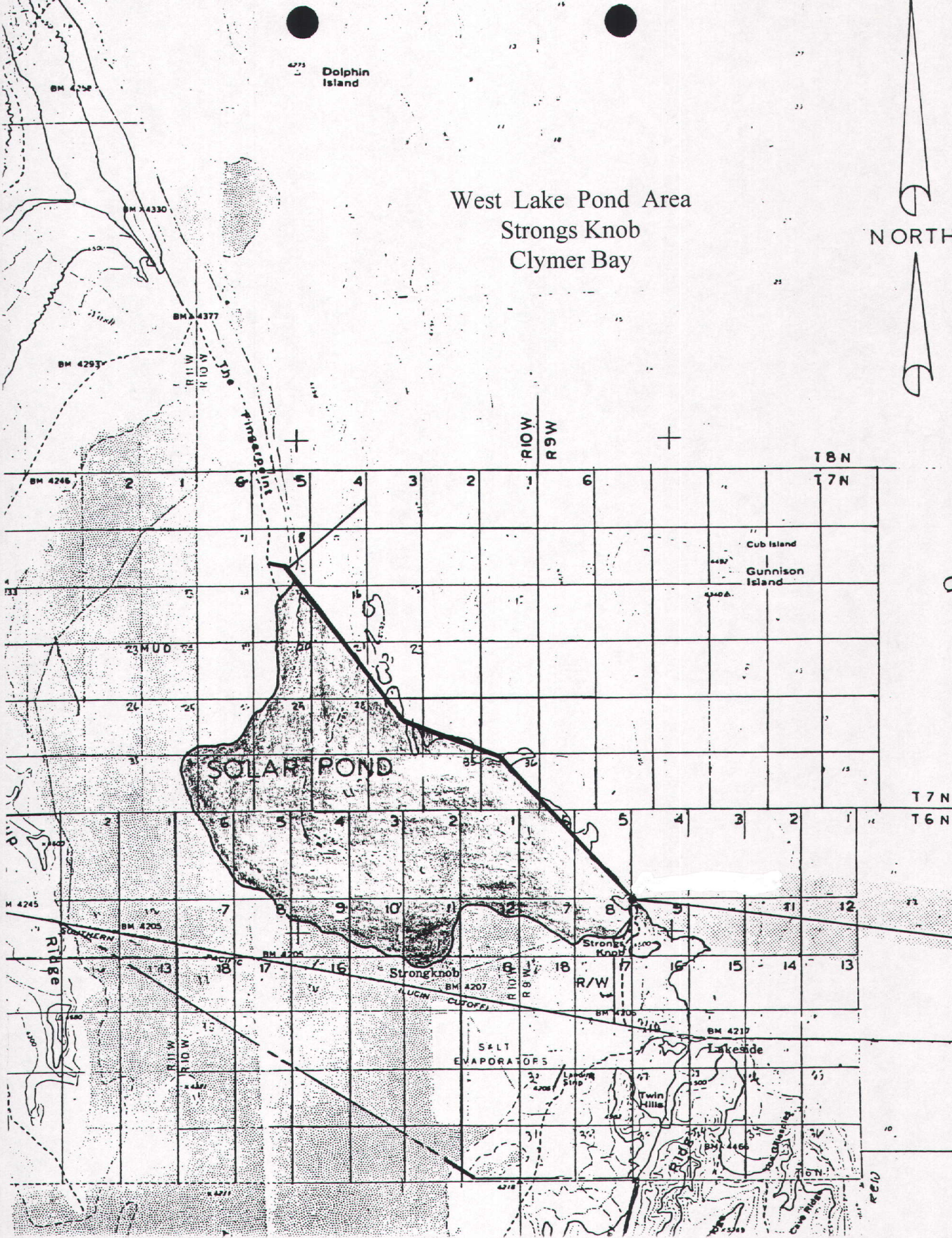
GSL believes the new operations features will naturally enhance the area's usefulness and therefore the surety amount remains the same.



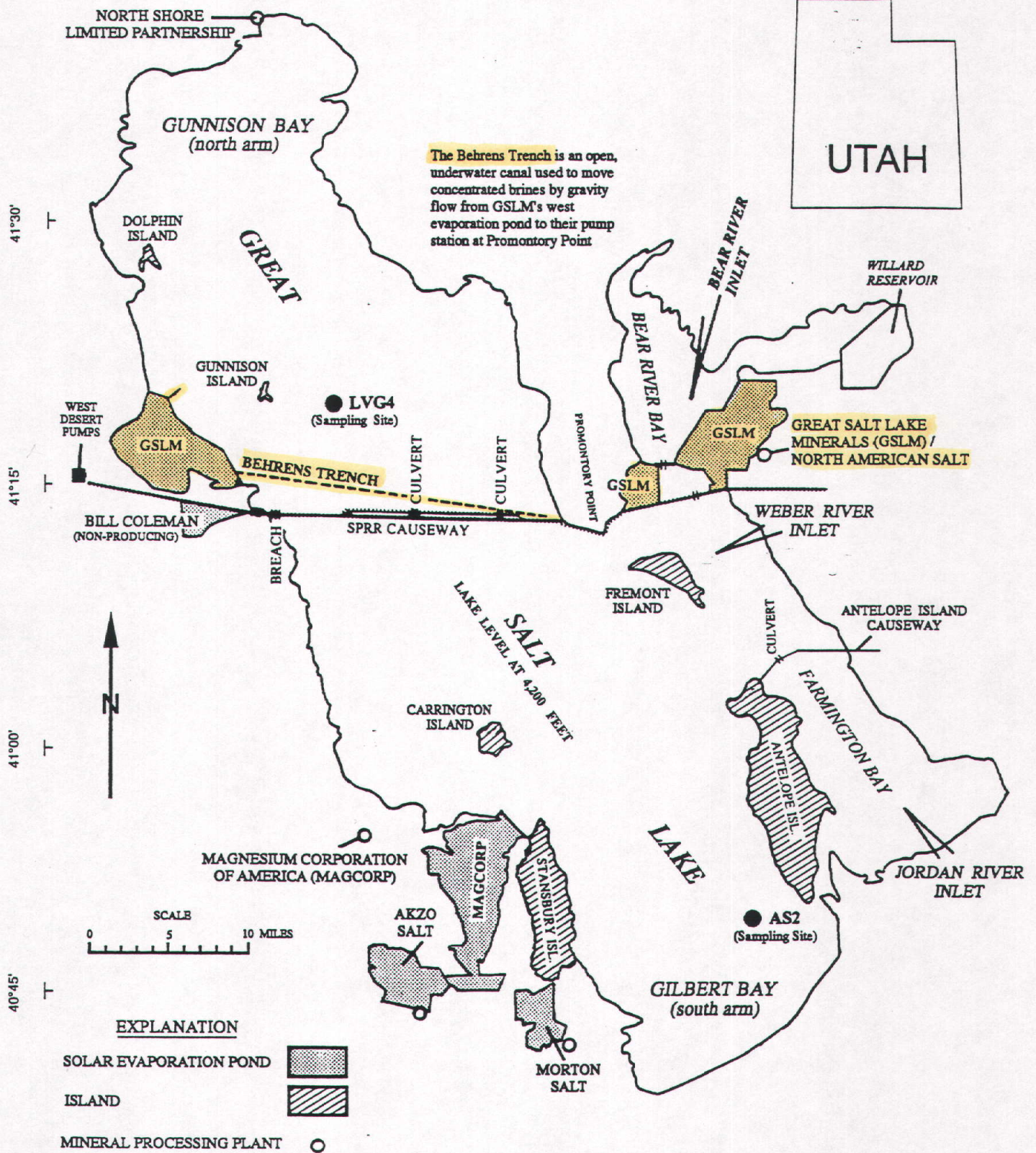
Dolphin Island

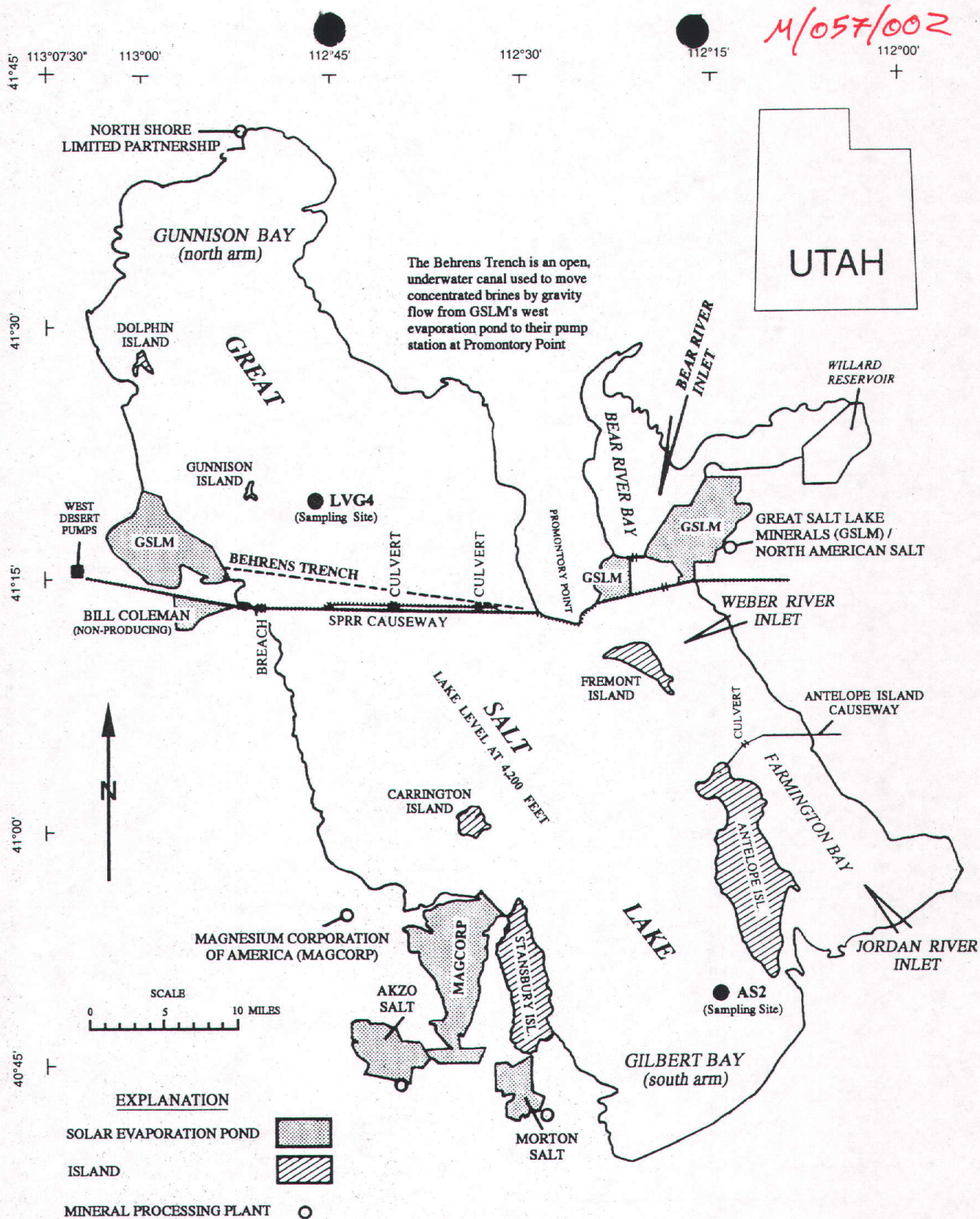
West Lake Pond Area
Strong's Knob
Clymer Bay

NORTH



113°07'30" 113°00' 112°45' 112°30' 112°15' 112°00'





BRINE PROPERTIES, MINERAL EXTRACTION INDUSTRIES, AND SALT LOAD OF GREAT SALT LAKE, UTAH

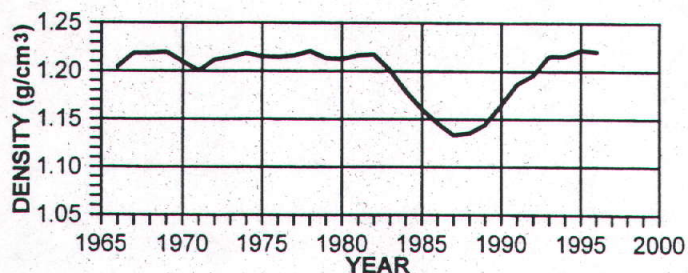
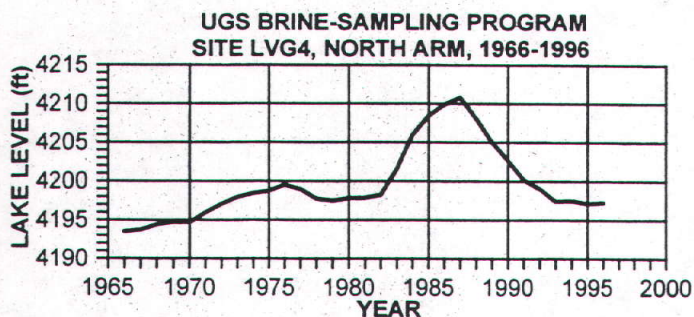
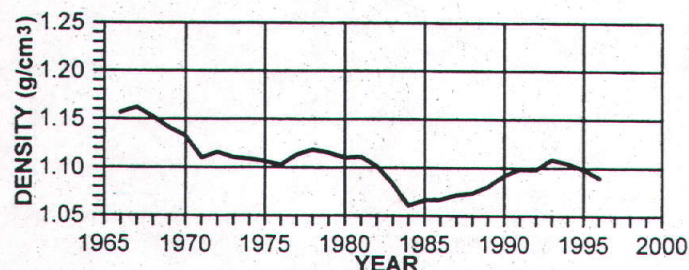
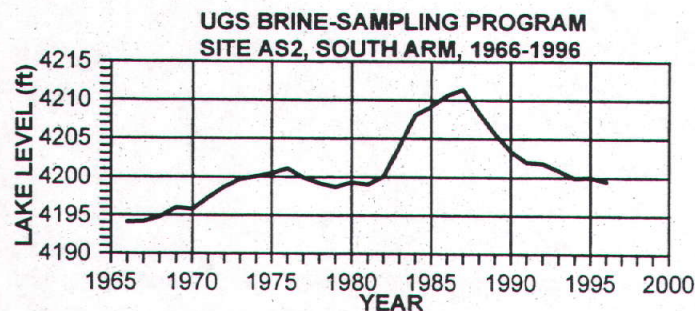
J. Wallace Gwynn - 1997



Public Information Series 51
Utah Geological Survey
a division of
Utah Department of Natural Resources

WATER DENSITY VERSUS LAKE ELEVATION

The graphs show average yearly lake elevation (feet above mean sea level) and water density (g/cm^3), a measure of salinity or salt content, for the south (site AS2) and north (site LVG4) arms of the lake from 1984 through 1996 (see map). The density of the south arm, which is fed by fresh-water tributaries, varies inversely with lake elevation. The north arm, which is fed by salty south-arm water, is more saline and less influenced by lake level. Farmington and Bear River Bays are much less saline than either the north or south arms of the lake.



WATER CHEMISTRY

Water chemistry, or the relative abundance of dissolved ions (dry-weight basis), remains relatively constant throughout both arms of the lake.

Table 1 shows the composition of dissolved salts in Great Salt Lake compared with the ocean (average composition), the Dead Sea, and Sevier Lake (Millard County, Utah).

Table 1. Comparison of different water chemistries

ION	GREAT SALT LAKE	OCEAN	DEAD SEA	SEVIER LAKE UTAH
Sodium	32.1	30.8	12.3	35.5
Potassium	2.3	1.1	2.3	1.4
Magnesium	3.7	3.7	12.8	1.6
Calcium	0.3	1.2	5.2	0.2
Chloride	54.0	55.5	67.1	49.1
Sulfate	7.6	7.7	0.1	12.1

MINERAL-EXTRACTION INDUSTRIES

Six mineral-extraction industries currently operate on Great Salt Lake (table 2). Cumulatively, these industries produced nearly 2.8 million tons of products during 1995, valued at about \$300 million.

Table 2. Active mineral extraction industries

INDUSTRY	PRODUCT(S)
Magnesium Corporation of America (MAGCORP)	Primary magnesium metal, alloys, and chlorine gas
AKZO Salt Company	Sodium chloride products
Morton Salt Company	Sodium chloride products
Great Salt Lake Minerals Corporation (GSLM)	Potassium sulfate (fertilizer), magnesium chloride products
North American Salt Company	Sodium chloride products
North Shore Ltd. Partnership/Mineral Resources International	Concentrated brines/ processed into dietary supplements

SALT LOAD AND POTENTIAL RESOURCES

Great Salt Lake contains about 4.5 billion tons of salt. Major changes in lake conditions, such as the 1980s flooding, breaching the Southern Pacific Railroad (SPRR) causeway in 1984, and West Desert pumping in 1987, have altered the balance of salt between the two arms. Raising the SPRR causeway during the 1980s reduced the permeability of the causeway and the bi-directional transfer of brines between the southern and northern arms. Because of this, there has been a constant loss of salt from the south arm of the lake to the north arm since 1994. The reduction in salinity is of great concern to the south-arm mineral-extraction industries and to the lake's multi-million dollar brine shrimp industry.

A buried, wedge-shaped body of natural sodium sulfate (mirabilite) extends westward from Promontory Point, beneath the SPRR causeway. Sodium sulfate is found cementing the near-shore sediments at shallow depths at numerous locations around the perimeter of the lake.